

WHAT IS CLAIMED IS:

1 1. A mobile communication system comprising a plurality of base
2 stations which are located at appropriate positions within a
3 predetermined area and conduct radio communications with a mobile
4 communication terminal, and an exchange office which is connected
5 with said base stations and conducts the exchange control toward
6 an external network, said exchange office conducting a Time Division
7 Multiplex radio communication by providing a synchronizing signal
8 from said exchange office to each of said base stations.

9 said system further comprising.

10 delay time detection means for detecting an arrival delay time
11 of said synchronizing signal to each of said base stations;

12 computation means for computing a timing correction value which
13 synchronizes a radio communication timing of all of said base
14 stations for each base station on the basis of a delay time detected;
15 and

16 correction means for correcting said synchronizing signal
17 supplied to said base stations according to said timing correction
18 value.

1 2. A mobile communication system, according to claim 1, wherein:
2 said delay detection means comprises:

3 means installed in said exchange office for generating a test
4 signal for delay time detection and sending said test signal to said
5 base stations;

6 means for sending by return said test signal sent from said
7 exchange office at said base station; and

8 measuring means for receiving said test signal sent by return

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9 from said base stations and for measuring a time difference between
10 times of transmission and arrival of said test signal.

3. A mobile communication system, according to claim 1, wherein:
said computing means establishes a predetermined standard value
and computes a difference between said standard value and a delay
time of each of said base stations as said timing correction value.

4. A mobile communication system, according to claim 2, wherein:
said computing means establishes a predetermined standard value
and computes a difference between said standard value and a delay
time of each of said base stations as said timing correction value.

1 5. A mobile communication system, according to claim 1, wherein:
2 said system comprises switching means for selectively switching
3 an operating conditions thereof to normal and test operating
4 conditions, and makes said delay time detection means operate when
5 said system is in a test operation mode.

6. A mobile communication system, according to claim 2, wherein:
said system comprises switching means for selectively switching
an operating conditions thereof to normal and test operating
conditions, and makes said delay time detection means operate when
said system is in a test operation mode.

1 7. A mobile communication system, according to claim 3, wherein:
2 said system comprises switching means for selectively switching
3 an operating conditions thereof to normal and test operating
4 conditions, and makes said delay time detection means operate when
5 said system is in a test operation mode.

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1 8. A mobile communication system, according to claim 4, wherein:
2 said system comprises switching means for selectively switching
3 an operating conditions thereof to normal and test operating
4 conditions, and makes said delay time detection means operate when
5 said system is in a test operation mode.

1 9. A mobile communication system, according to claim 5, wherein:
2 said system executes said test operation mode when operating
3 said system for the first time and/or terminating a maintenance
4 operation including additional installation of said base stations.

1 10 A mobile communication system, according to claim 6,
2 wherein:
3 said system executes said test operation mode when operating
4 said system for the first time and/or terminating a maintenance
5 operation including additional installation of said base stations.

1 11. A mobile communication system, according to claim 7,
2 wherein:
3 said system executes said test operation mode when operating
4 said system for the first time and/or terminating a maintenance
5 operation including additional installation of said base stations.

1 12. A mobile communication system, according to claim 8,
2 wherein:
3 said system executes said test operation mode when operating
4 said system for the first time and/or terminating a maintenance
5 operation including additional installation of said base stations.

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1 13. A method of controlling synchronization between base
2 stations in a mobile communication system comprising a plurality
3 of base stations which are located at appropriate positions within
4 a predetermined area and conduct radio communications with a mobile
5 communication terminal, and an exchange office which is connected
6 with said base stations and conducts the exchange control toward
7 an external network, said exchange office conducting a Time Division
8 Multiplex radio communication by providing a synchronizing signal
9 from said exchange office to each of said base stations.

10 said method comprising the steps of:

11 detecting an arrival delay time of said synchronizing signal
12 to each of said base stations;

13 computing a timing correction value which synchronizes timing
14 of radio communication of all the base stations on the basis of delay
15 time detected for each of said base stations; and

16 correcting said synchronizing signal supplied to said base
17 station according to said timing correction value.

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